Li R.
10/629329
Seq. ID 2

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: February 1, 2005, 14:15:38 ; Search time 166 Seconds
(without alignments)
522.967 Million cell updates/sec

Title: US-10-629-329A-2
Perfect score: 1322
Sequence: 1 MSGCDAGEGDCCSRRCGAQD.....SMKKVGLDPSQLPVGENGIV 242

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_23Sep04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1322	100.0	242	8	ADJ62654	Adj62654 Human ran
2	1314	99.4	242	5	AAU78360	Aau78360 Cell diff
3	1307	98.9	242	4	AAG67127	Aag67127 Amino aci
4	1296	98.0	242	2	AAW94762	Aaw94762 Amino aci
5	1296	98.0	242	4	AAY85636	Aay85636 Antigen r
6	1296	98.0	242	5	AAU77178	Aau77178 Human G-C
7	1239.5	93.8	241	4	AAY85635	Aay85635 Antigen r
8	1239.5	93.8	241	5	AAU77177	Aau77177 Murine G-
9	1239.5	93.8	241	5	AAU78361	Aau78361 Cell diff
10	1239.5	93.8	241	8	ADJ62656	Adj62656 Mouse ran
11	790	59.8	227	4	ABB65485	Abb65485 Drosophil
12	312	23.6	64	8	ABO55349	Abo55349 Human gen
13	273.5	20.7	129	4	AAO10783	Aao10783 Human pol
14	228	17.2	59	4	AAG74374	Aag74374 Human col
15	195	14.8	212	6	ABU17451	Abu17451 Protein e
16	193	14.6	204	6	ABU41912	Abu41912 Protein e
17	182	13.8	204	6	ABU27936	Abu27936 Protein e
18	168.5	12.7	238	7	ABO81414	Abo81414 Pseudomon
19	166	12.6	205	6	ABU15639	Abu15639 Protein e
20	149	11.3	205	7	ABO66904	Abo66904 Klebsiell
21	142	10.7	227	6	ABU02540	Abu02540 S. pneumo
22	140	10.6	202	6	ABU31958	Abu31958 Protein e
23	137	10.4	234	6	ABU46266	Abu46266 Protein e
24	137	10.4	238	3	AAY70730	Aay70730 Klebsiell
25	136.5	10.3	220	6	ABU21860	Abu21860 Protein e
26	136	10.3	234	8	ADK48234	Adk48234 Streptoco
27	135	10.2	190	7	ADM26979	Adm26979 Hyperther
28	133.5	10.1	234	5	ABP27712	Abp27712 Streptoco
29	133.5	10.1	234	6	ABU46430	Abu46430 Protein e
30	132	10.0	228	6	ABU47361	Abu47361 Protein e
31	131	9.9	181	6	ABU18884	Abu18884 Protein e
32	131	9.9	228	6	ABU48206	Abu48206 Protein e
33	130	9.8	241	7	ADC94690	Adc94690 E. faeciu
34	129.5	9.8	230	5	ABP65425	Abp65425 Bifidobac
35	129	9.8	228	6	ABU28874	Abu28874 Protein e
36	128.5	9.7	231	6	ABU49976	Abu49976 Protein e
37	127.5	9.6	232	6	ABU29712	Abu29712 Protein e
38	127.5	9.6	233	7	ADC95935	Adc95935 E. faeciu
39	127	9.6	230	6	ABU49674	Abu49674 Protein e
40	126	9.5	242	2	AAW22376	Aaw22376 S. pneumo
41	126	9.5	242	8	ADK47774	Adk47774 Streptoco
42	125.5	9.5	236	6	ABU29217	Abu29217 Protein e
43	125.5	9.5	241	7	ADH88180	Adh88180 Enterococ
44	122.5	9.3	228	6	ABU25094	Abu25094 Protein e
45	122	9.2	222	8	ADN47255	Adn47255 Thermococ

ALIGNMENTS

RESULT 1
ADJ62654
ID ADJ62654 standard; protein; 242 AA.
XX
AC ADJ62654;
XX
DT 06-MAY-2004 (first entry)
XX
DE Human rank-associated inhibitor (RAIN) protein SEQ ID NO:2.
XX
KW rank-associated inhibitor; RAIN protein;
KW osteoclast precursor cell fusion inhibitor; osteopathic; bone loss;
KW human; chromosome 11.
XX
OS Homo sapiens.
XX
PN WO2004011620-A2.
XX
PD 05-FEB-2004.
XX
PF 29-JUL-2003; 2003WO-US023801.
XX
PR 29-JUL-2002; 2002US-0399205P.
XX
PA (TEXA) UNIV TEXAS SYSTEM.
XX
PI Darnay BG;
XX
DR WPI; 2004-143848/14.
DR N-PSDB; ADJ62653.
XX
PT New isolated Rank-Associated Inhibitor (RAIN) polypeptides, useful for
PT treating a subject with bone loss by inhibiting osteoclast precursor cell
PT fusion.
XX
PS Claim 1; SEQ ID NO 2; 97pp; English.
XX
CC The present invention describes an isolated polypeptide containing at
CC least 10 contiguous amino acids of a rank-associated inhibitor (RAIN)
CC protein. Also described: (1) an isolated polynucleotide comprising a
CC nucleic acid encoding a RAIN polypeptide; (2) a method of treating a
CC subject with bone loss comprising inhibiting osteoclast precursor cell
CC fusion by administering a RAIN polypeptide to modulate RANK signaling, or
CC an expression vector comprising the polynucleotide under the
CC transcriptional control of a promoter; (3) a method for inhibiting
CC osteoclast precursor cell fusion by contacting an osteoclast precursor
CC cell with an expression vector that expresses a RAIN polypeptide; and (4)
CC a method for identifying a modulator of an osteoclast precursor fusion by

CC providing a cell deficient in a RAIN polypeptide; contacting the cell
CC with a candidate substance; and comparing osteoclast cell fusion observed
CC when the candidate substance is not added, where the alteration in
CC osteoclast cell fusion indicates that the candidate substance is a
CC modulator of an osteoclast cell fusion. RAIN sequences have osteopathic
CC activities, and can be used for inhibiting osteoclast precursor cell
CC fusion. The RAIN polypeptide, expression vector and methods are useful
CC for treating a subject with bone loss. The present sequence represents
CC human RAIN, which is used in the exemplification of the present
CC invention. The human RAIN gene is located on chromosome 11, more
CC specifically to 11p12-13.
XX
SQ Sequence 242 AA;

Query Match 100.0%; Score 1322; DB 8; Length 242;
Best Local Similarity 100.0%; Pred. No. 3.1e-137;
Matches 242; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240

Qy        241 IV 242
              ||
Db        241 IV 242
```

RESULT 2
AAU78360
ID AAU78360 standard; protein; 242 AA.
XX
AC AAU78360;
XX
DT 18-JUN-2002 (first entry)
XX
DE Cell differentiation stimulator associated protein #1.
XX
KW Cartilage cell differentiation stimulator; osteopathic;
KW Membrane-bound transferrin-like protein; MTf-BP; concanavalin A; ConA;
KW membrane bound type transferrin-like protein; MTf; cartilage disorder;
KW bone metabolism disease; cell differentiation; cell growth;
KW extracellular matrix related disease; human.
XX
OS Homo sapiens.
XX
PN JP2002020311-A.
XX
PD 23-JAN-2002.
XX
PF 07-JUL-2000; 2000JP-00206566.
XX
PR 07-JUL-2000; 2000JP-00206566.
XX
PA (KAGA-) KAGAKU GIJUTSU SHINKO JIGYODAN.
XX
DR WPI; 2002-287405/33.
DR N-PSDB; ABK12566.
XX
PT A cartilage cell differentiation stimulator useful in the diagnosis of
PT biophylaxis, cell differentiation, cell growth and construction of
PT extracellular matrix related diseases.
XX
PS Claim 2; Page 8-9; 17pp; Japanese.
XX
CC The invention describes a cartilage cell differentiation stimulator
CC (containing a membrane-bound transferrin-like protein (MTf-BP) and a
CC membrane bound type transferrin-like protein (MTf)) and an animal-derived
CC concanavalin-like drug. The cartilage differentiation stimulator can be
CC used in diagnosis, prevention and treatment of cartilage and bone
CC metabolism diseases. They can also be used for diagnosing biophylaxis,
CC cell differentiation, cell growth and construction of extracellular
CC matrix related diseases. MTf-BP strongly stimulates differentiation of
CC cartilage cells and exhibits similar action mechanism with that of plant
CC derived ConA. This is the amino acid sequence of a cartilage cell
CC differentiation stimulator associated polypeptide described in the
CC invention
XX
SQ Sequence 242 AA;

Query Match 99.4%; Score 1314; DB 5; Length 242;
Best Local Similarity 99.6%; Pred. No. 2.4e-136;
Matches 241; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              |||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKTLKDRMAHA 180

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240

Qy        241 IV 242
              ||
Db        241 IV 242
```

RESULT 3
AAG67127
ID AAG67127 standard; protein; 242 AA.
XX
AC AAG67127;
XX
DT 13-NOV-2001 (first entry)
XX
DE Amino acid sequence of a human enzyme.
XX
KW Human; enzyme; cancer; neurological disorder; epilepsy; stroke;
KW Alzheimer's disease; Pick's disease; Huntington's disease; dementia;
KW multiple sclerosis; Parkinson's disease; amyotropic lateral sclerosis;
KW meningitis; schizophrenic disorder; neuroskeletal disorder; allergy;
KW addison's disease; autoimmune disease; anemia; asthma; Crohn's disease;
KW adult respiratory distress syndrome; atopic dermatitis; psoriasis;
KW diabetes mellitus; osteoporosis; pancreatitis; rheumatoid arthritis;
KW infection; genetic disorder; muscular dystrophy; Gaucher's disease;
KW Huntington's chorea; sickle cell anemia; thalassemia; atherosclerosis;
KW Von Willebrand's disease; Wilms' tumour; cell proliferative disorder;
KW leukemia; hepatitis; cirrhosis; arteriosclerosis; gene therapy.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Modified-site 2
FT /note= "potential phosphorylation site"
FT Modified-site 13
FT /note= "potential phosphorylation site"
FT Modified-site 49

```
FT                   /note= "potential phosphorylation site"
FT   Modified-site   57
FT                   /note= "potential phosphorylation site"
FT   Modified-site   89
FT                   /note= "potential phosphorylation site"
FT   Modified-site   106
FT                   /note= "potential phosphorylation site"
FT   Modified-site   136
FT                   /note= "potential phosphorylation site"
FT   Modified-site   148
FT                   /note= "potential phosphorylation site"
FT   Modified-site   167
FT                   /note= "potential phosphorylation site"
FT   Modified-site   209
FT                   /note= "potential phosphorylation site"
FT   Modified-site   216
FT                   /note= "potential phosphorylation site"
FT   Modified-site   223
FT                   /note= "potential phosphorylation site"
XX
PN   WO200164896-A2.
XX
PD   07-SEP-2001.
XX
PF   01-MAR-2001; 2001WO-US006806.
XX
PR   01-MAR-2000; 2000US-0186307P.
PR   28-MAR-2000; 2000US-0192532P.
PR   30-MAR-2000; 2000US-0193578P.
XX
PA   (INCY-) INCYTE GENOMICS INC.
XX
PI   Tang YT,  Lu DAM,  Bandman O,  Yue H,  Azimzai Y,  Lal P,  Burford N;
PI   Baughn MR;
XX
DR   WPI; 2001-550184/61.
DR   N-PSDB; AAH75155.
XX
PT   Novel human enzyme molecule useful for treating and preventing, e.g.,
PT   cancer, genetic disorders, neurological disorders, autoimmune and
PT   inflammatory disorders.
XX
PS   Claim 1; Page 117; 154pp; English.
XX
CC   The present sequence represents a human enzyme. The enzyme polynucleotide
CC   and polypeptide are useful for diagnosis, treatment and prevention of
CC   cancers, neurological disorders (e.g. epilepsy, stroke, Alzheimer's
CC   disease, Pick's disease, Huntington's disease, dementia, multiple
CC   sclerosis, Parkinson's disease, amyotropic lateral sclerosis, bacterial
CC   and viral meningitis, schizophrenic disorders and neuroskeletal
CC   disorders), autoimmune/inflammatory disorders (e.g. allergies, addison's
CC   disease, autoimmune diseases, adult respiratory distress syndrome,
CC   anemia, asthma, Crohn's disease, atopic dermatitis, diabetes mellitus,
CC   osteoporosis, pancreatitis, psoriasis, rheumatoid arthritis, and viral,
CC   bacterial, fungal, parasitic, protozoal and helminthic infections),
CC   genetic disorder (e.g. Duchenne and Becker muscular dystrophy, Gaucher's
CC   disease, Huntington's chorea, sickle cell anemia, thalassemia, Von
CC   Willebrand's disease and Wilms' tumour), and cell proliferative disorder
CC   (e.g. atherosclerosis, leukemia, hepatitis, cirrhosis, and
CC   arteriosclerosis). The polynucleotide is also useful in somatic or
CC   germline gene therapy
XX
SQ   Sequence 242 AA;

  Query Match             98.9%;  Score 1307;  DB 4;  Length 242;
  Best Local Similarity   99.2%;  Pred. No. 1.4e-135;
  Matches  240;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              |||||| |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSGCDAREGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              ||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKDLKDRMAHA 180

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240

Qy        241 IV 242
              ||
Db        241 IV 242


RESULT 4
AAW94762
ID   AAW94762 standard; protein; 242 AA.
XX
AC   AAW94762;
XX
DT   28-APR-1999  (first entry)
XX
DE   Amino acid sequence of human HFIZG53.
XX
KW   HFIZG53; human; inflammatory disease; infection; HIV-1; HIV-2; cancer;
KW   HIV-associated cachexia; immunodeficiency disorder; septic shock; pain;
KW   Parkinson's disease; cardiovascular disease; psychotic; neurological;
KW   Huntington's disease; Gilles de la Tourette's syndrome; gene mapping.
XX
OS   Homo sapiens.
XX
PN   EP892050-A2.
XX
PD   20-JAN-1999.
XX
PF   17-FEB-1998;   98EP-00301168.
XX
PR   08-JUL-1997;   97US-0051937P.
PR   17-OCT-1997;   97US-00953494.
XX
PA   (SMIK ) SMITHKLINE BEECHAM CORP.
XX
PI   Demarini DJ;
XX
DR   WPI; 1999-083567/08.
DR   N-PSDB; AAX05748.
XX
PT   New HFIZG53 polypeptide and polynucleotide - useful as diagnostic
PT   reagents and for prevention and treatment of inflammatory diseases,
PT   cancer and Parkinson's disease.
XX
PS   Claim 11; Page 7; 22pp; English.
XX
CC   This represents the amino acid sequence of human HFIZG53. Host cells
CC   containing an expression system comprising the HFIZG53 nucleic acid are
CC   used for the recombinant production of the protein. HFIZG53 polypeptides
CC   and polynucleotides are useful for diagnosing diseases related to over or
CC   underexpression of HFIZG53 protein. The HFIZG53 polypeptides can be used
CC   to screen for agonists and antagonists which can be used in treatment to
CC   activate or inhibit HFIZG53 activity. Gene therapy may also be used to
CC   affect endogenous polypeptide production, using HFIZG53 polynucleotides
CC   and retroviral vectors. HFIZG53 antibodies are useful for inducing an
CC   immune response to immunise and prevent diseases, and for isolating
CC   HFIZG53 clones or purifying the polypeptide by affinity chromatography.
CC   HFIZG53 polypeptides can be administered directly or as a vaccine to
CC   inoculate against disease. Diseases prevented, diagnosed or treated
CC   include inflammatory diseases such as Adult Respiratory Disease Syndrome,
CC   rheumatoid arthritis, osteoarthritis, inflammatory Bowel Disease, asthma,
CC   psoriasis, dermatitis, allergies; infections including bacterial, fungal,
CC   protozoan and viral, particularly HIV-1 and -2; HIV-associated cachexia
CC   and other immunodeficiency disorders; septic shock; injury; pain; cancers
```

CC including testicular cancer; anorexia; bulimia; Parkinson's disease;
CC cardiovascular disease including restenosis, atherosclerosis, acute heart
CC failure, myocardial infarction, hypotension, hypertension; urinary
CC retention; angina pectoris; ulcers; benign prostatic hypertrophy; and
CC psychotic and neurological disorders (anxiety, schizophrenia, delirium,
CC manic depression, dementia, severe mental retardation) and dyskinesias,
CC such as Huntington's diseases or Gilles de la Tourette's syndrome. The
CC HFIZG53 polypeptide is also useful for mapping the gene to a chromosome,
CC allowing gene inheritance to be studied through linkage analysis
XX
SQ Sequence 242 AA;

Query Match 98.0%; Score 1296; DB 2; Length 242;
Best Local Similarity 98.8%; Pred. No. 2.3e-134;
Matches 239; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

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Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              |||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSGCDAWEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||
Db         61 SGVQKERIQPEDMFVYDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              |||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKDLKDRMAHA 180

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240

Qy        241 IV 242
              ||
Db        241 IV 242
```

RESULT 5
AAY85636
ID AAY85636 standard; protein; 242 AA.
XX
AC AAY85636;
XX
DT 07-FEB-2001 (first entry)
XX
DE Antigen recognised by Ab capable of inducing G-CSF activity.
XX
KW Antigenic protein; antibody; granulocyte colony stimulating factor;
KW G-CSF; cancer therapy; bone marrow suppression; human.
XX
OS Homo sapiens.
XX
PN WO200060075-A1.
XX
PD 12-OCT-2000.
XX
PF 31-MAR-2000; 2000WO-JP002080.
XX
PR 01-APR-1999; 99JP-00095092.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Sha S, Aoki Y, Nishi Y;
XX
DR WPI; 2001-024452/03.
DR N-PSDB; AAC61150.
XX
PT Gene encoding an antigen recognizing an antibody which induces
PT granulocyte colony stimulating factor (G-CSF) expression for gene therapy
PT and treatment of G-CSF associated disorders e.g. the side effects of
PT cancer therapy.
XX
PS Claim 3; Page 52-53; 58pp; Japanese.
XX
CC The present invention relates to a gene encoding an antigenic protein
CC recognised by an antibody or its fragments which can induce the
CC production of granulocyte colony stimulating factor (G-CSF). Also
CC included in the invention are partial sequences of the gene, antibodies
CC recognising all or part of the antigenic protein, expression vectors
CC containing the gene and host cells transformed by the vector. The gene is
CC used for gene therapy, and compounds identified by screening using the
CC gene sequence are used for treatment and prevention of disorders
CC associated with G-CSF expression such as the side effects of cancer
CC therapy (including bone marrow suppression). The present sequence
CC represents the human antigen of the invention
XX
SQ Sequence 242 AA;

Query Match 98.0%; Score 1296; DB 4; Length 242;
Best Local Similarity 98.8%; Pred. No. 2.3e-134;
Matches 239; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

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Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              |||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSGCDAWEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||
Db         61 SGVQKERIQPEDMFVYDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              |||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKDLKDRMAHA 180

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240

Qy        241 IV 242
              ||
Db        241 IV 242
```

RESULT 6
AAU77178
ID AAU77178 standard; protein; 242 AA.
XX
AC AAU77178;
XX
DT 02-JUL-2002 (first entry)
XX
DE Human G-CSF-inducible antibody binding protein, MMR19.
XX
KW Human; granulocyte-colony stimulating factor; G-CSF; MMR19;
KW antimicrobial; G-CSF-inducible antibody; neutrophil deficiency disease;
KW infection.
XX
OS Homo sapiens.
XX
PN WO200226978-A1.
XX
PD 04-APR-2002.
XX
PF 27-SEP-2001; 2001WO-JP008446.
XX
PR 27-SEP-2000; 2000JP-00294191.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Sha S, Mukai H, Aoki Y, Nishi Y;
XX
DR WPI; 2002-340016/37.
DR N-PSDB; ABK47967.
XX
PT Gene encoding protein binding to antibody having granulocyte-colony
PT stimulating factor (G-CSF) inducing activity, useful for screening

PT potential drugs treating G-CSF associated diseases.
XX
PS Claim 3; Page 96-97; 103pp; Japanese.
XX
CC The invention relates to a mouse or human gene (MMR19) encoding a protein
CC which binds to antibodies or their fragments which induce granulocyte-
CC colony stimulating factor (G-CSF) secretion. The genes and proteins of
CC the invention are used in diagnosis, treatment and prevention of diseases
CC associated with G-CSF, including infections and neutrophil deficiency
CC disease. This sequence represents a human G-CSF-inducible antibody
CC binding protein, MMR19
XX
SQ Sequence 242 AA;

Query Match 98.0%; Score 1296; DB 5; Length 242;
Best Local Similarity 98.8%; Pred. No. 2.3e-134;
Matches 239; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

```
Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              |||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSGCDAWEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              |||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db         61 SGVQKERIQPEDMFVYDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKDLKDRMAHA 180

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240

Qy        241 IV 242
              ||
Db        241 IV 242
```

RESULT 7
AAY85635
ID AAY85635 standard; protein; 241 AA.
XX
AC AAY85635;
XX
DT 07-FEB-2001 (first entry)
XX
DE Antigen recognised by Ab capable of inducing G-CSF activity.
XX
KW Antigenic protein; antibody; granulocyte colony stimulating factor;
KW G-CSF; cancer therapy; bone marrow suppression; mouse.
XX
OS Mus sp.
XX
PN WO200060075-A1.
XX
PD 12-OCT-2000.
XX
PF 31-MAR-2000; 2000WO-JP002080.
XX
PR 01-APR-1999; 99JP-00095092.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Sha S, Aoki Y, Nishi Y;
XX
DR WPI; 2001-024452/03.
DR N-PSDB; AAC61149.
XX
PT Gene encoding an antigen recognizing an antibody which induces
PT granulocyte colony stimulating factor (G-CSF) expression for gene therapy
PT and treatment of G-CSF associated disorders e.g. the side effects of
PT cancer therapy.
XX
PS Claim 2; Page 49-50; 58pp; Japanese.
XX
CC The present invention relates to a gene encoding an antigenic protein
CC recognised by an antibody or its fragments which can induce the
CC production of granulocyte colony stimulating factor (G-CSF). Also
CC included in the invention are partial sequences of the gene, antibodies
CC recognising all or part of the antigenic protein, expression vectors
CC containing the gene and host cells transformed by the vector. The gene is
CC used for gene therapy, and compounds identified by screening using the
CC gene sequence are used for treatment and prevention of disorders
CC associated with G-CSF expression such as the side effects of cancer
CC therapy (including bone marrow suppression). The present sequence
CC represents the murine antigen of the invention
XX
SQ Sequence 241 AA;

Query Match 93.8%; Score 1239.5; DB 4; Length 241;
Best Local Similarity 93.8%; Pred. No. 4.1e-128;
Matches 227; Conservative 9; Mismatches 5; Indels 1; Gaps 1;

```
Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              |||| | :|||||| ||||||||||:||||||||||||||||||||||||:||||||
Db          1 MSGCQA-QGDCCSRPCGAQDKEHPRFLIPELCKQFYHLGWVTGTGGGISLKHGNEIYIAP 59

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||||||:|||||  ||||||||||||||||||||||||||||||||||
Db         60 SGVQKERIQPEDMFVCDINEQDISGPPASKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 119

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              ||||||||||:|||||||||||||:|||||||||||||||||||||||||| ||:|||||
Db        120 AVMATLLFPGQEFKITHQEMIKGIRKCTSGGYYRYDDMLVVPIIENTPEEKDLKERMAHA 179

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||||:||||:||||||||
Db        180 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKMGLDPTQLPVGENG 239

Qy        241 IV 242
              ||
Db        240 IV 241
```

RESULT 8
AAU77177
ID AAU77177 standard; protein; 241 AA.
XX
AC AAU77177;
XX
DT 02-JUL-2002 (first entry)
XX
DE Murine G-CSF-inducible antibody binding protein, MMR19.
XX
KW Mouse; granulocyte-colony stimulating factor; G-CSF; MMR19;
KW antimicrobial; G-CSF-inducible antibody; neutrophil deficiency disease;
KW infection.
XX
OS Mus sp.
XX
PN WO200226978-A1.
XX
PD 04-APR-2002.
XX
PF 27-SEP-2001; 2001WO-JP008446.
XX
PR 27-SEP-2000; 2000JP-00294191.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Sha S, Mukai H, Aoki Y, Nishi Y;
XX
DR WPI; 2002-340016/37.
DR N-PSDB; ABK47966.
XX

PT Gene encoding protein binding to antibody having granulocyte-colony
PT stimulating factor (G-CSF) inducing activity, useful for screening
PT potential drugs treating G-CSF associated diseases.
XX
PS Claim 1; Page 93-94; 103pp; Japanese.
XX
CC The invention relates to a mouse or human gene (MMR19) encoding a protein
CC which binds to antibodies or their fragments which induce granulocyte-
CC colony stimulating factor (G-CSF) secretion. The genes and proteins of
CC the invention are used in diagnosis, treatment and prevention of diseases
CC associated with G-CSF, including infections and neutrophil deficiency
CC disease. This sequence represents a mouse G-CSF-inducible antibody
CC binding protein, MMR19
XX
SQ Sequence 241 AA;

Query Match 93.8%; Score 1239.5; DB 5; Length 241;
Best Local Similarity 93.8%; Pred. No. 4.1e-128;
Matches 227; Conservative 9; Mismatches 5; Indels 1; Gaps 1;

```
Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              |||| | :|||||| |||||||||:||||||||||||||||||||||||:||||||
Db          1 MSGCQA-QGDCCSRPCGAQDKEHPRFLIPELCKQFYHLGWVTGTGGGISLKHGNEIYIAP 59

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||||||:|||||  ||||||||||||||||||||||||||||||||||
Db         60 SGVQKERIQPEDMFVCDINEQDISGPPASKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 119

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              ||||||||||:|||||||||||||:||||||||||||||||||||||||| ||:|||||
Db        120 AVMATLLFPGQEFKITHQEMIKGIRKCTSGGYYRYDDMLVVPIIENTPEEKDLKERMAHA 179

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||:||||:|||||||
Db        180 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKMGLDPTQLPVGENG 239

Qy        241 IV 242
              ||
Db        240 IV 241
```

RESULT 9
AAU78361
ID AAU78361 standard; protein; 241 AA.
XX
AC AAU78361;
XX
DT 18-JUN-2002 (first entry)
XX
DE Cell differentiation stimulator associated protein #2.
XX
KW Cartilage cell differentiation stimulator; osteopathic;
KW Membrane-bound transferrin-like protein; MTf-BP; concanavalin A; ConA;
KW membrane bound type transferrin-like protein; MTf; cartilage disorder;
KW bone metabolism disease; cell differentiation; cell growth;
KW extracellular matrix related disease; mouse.
XX
OS Mus sp.
XX
PN JP2002020311-A.
XX
PD 23-JAN-2002.
XX
PF 07-JUL-2000; 2000JP-00206566.
XX
PR 07-JUL-2000; 2000JP-00206566.
XX
PA (KAGA-) KAGAKU GIJUTSU SHINKO JIGYODAN.
XX
DR WPI; 2002-287405/33.
DR N-PSDB; ABK12567.
XX
PT A cartilage cell differentiation stimulator useful in the diagnosis of
PT biophylaxis, cell differentiation, cell growth and construction of
PT extracellular matrix related diseases.
XX
PS Claim 2; Page 9-10; 17pp; Japanese.
XX
CC The invention describes a cartilage cell differentiation stimulator
CC (containing a membrane-bound transferrin-like protein (MTf-BP) and a
CC membrane bound type transferrin-like protein (MTf)) and an animal-derived
CC concanavalin-like drug. The cartilage differentiation stimulator can be
CC used in diagnosis, prevention and treatment of cartilage and bone
CC metabolism diseases. They can also be used for diagnosing biophylaxis,
CC cell differentiation, cell growth and construction of extracellular
CC matrix related diseases. MTf-BP strongly stimulates differentiation of
CC cartilage cells and exhibits similar action mechanism with that of plant
CC derived ConA. This is the amino acid sequence of a cartilage cell
CC differentiation stimulator associated polypeptide described in the
CC invention
XX
SQ Sequence 241 AA;

Query Match 93.8%; Score 1239.5; DB 5; Length 241;
Best Local Similarity 93.8%; Pred. No. 4.1e-128;
Matches 227; Conservative 9; Mismatches 5; Indels 1; Gaps 1;

```
Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              |||| | :|||||| |||||||||:||||||||||||||||||||||||:||||||
Db          1 MSGCQA-QGDCCSRPCGAQDKEHPRFLIPELCKQFYHLGWVTGTGGGISLKHGNEIYIAP 59

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||||||:|||||  ||||||||||||||||||||||||||||||||||
Db         60 SGVQKERIQPEDMFVCDINEQDISGPPASKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 119

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              ||||||||||:|||||||||||||:||||||||||||||||||||||||| ||:|||||
Db        120 AVMATLLFPGQEFKITHQEMIKGIRKCTSGGYYRYDDMLVVPIIENTPEEKDLKERMAHA 179

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||:||||:|||||||
Db        180 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKMGLDPTQLPVGENG 239

Qy        241 IV 242
              ||
Db        240 IV 241
```

RESULT 10
ADJ62656
ID ADJ62656 standard; protein; 241 AA.
XX
AC ADJ62656;
XX
DT 06-MAY-2004 (first entry)
XX
DE Mouse rank-associated inhibitor (RAIN) protein SEQ ID NO:4.
XX
KW rank-associated inhibitor; RAIN protein;
KW osteoclast precursor cell fusion inhibitor; osteopathic; bone loss;
KW mouse; chromosome 2.
XX
OS Mus musculus.
XX
PN WO2004011620-A2.
XX
PD 05-FEB-2004.
XX
PF 29-JUL-2003; 2003WO-US023801.
XX
PR 29-JUL-2002; 2002US-0399205P.
XX
PA (TEXA) UNIV TEXAS SYSTEM.
XX
PI Darnay BG;
XX

```
DR   WPI; 2004-143848/14.
DR   N-PSDB; ADJ62655.
XX
PT   New isolated Rank-Associated Inhibitor (RAIN) polypeptides, useful for
PT   treating a subject with bone loss by inhibiting osteoclast precursor cell
PT   fusion.
XX
PS   Claim 1; SEQ ID NO 4; 97pp; English.
XX
CC   The present invention describes an isolated polypeptide containing at
CC   least 10 contiguous amino acids of a rank-associated inhibitor (RAIN)
CC   protein. Also described: (1) an isolated polynucleotide comprising a
CC   nucleic acid encoding a RAIN polypeptide; (2) a method of treating a
CC   subject with bone loss comprising inhibiting osteoclast precursor cell
CC   fusion by administering a RAIN polypeptide to modulate RANK signaling, or
CC   an expression vector comprising the polynucleotide under the
CC   transcriptional control of a promoter; (3) a method for inhibiting
CC   osteoclast precursor cell fusion by contacting an osteoclast precursor
CC   cell with an expression vector that expresses a RAIN polypeptide; and (4)
CC   a method for identifying a modulator of an osteoclast precursor fusion by
CC   providing a cell deficient in a RAIN polypeptide; contacting the cell
CC   with a candidate substance; and comparing osteoclast cell fusion observed
CC   when the candidate substance is not added, where the alteration in
CC   osteoclast cell fusion indicates that the candidate substance is a
CC   modulator of an osteoclast cell fusion. RAIN sequences have osteopathic
CC   activities, and can be used for inhibiting osteoclast precursor cell
CC   fusion. The RAIN polypeptide, expression vector and methods are useful
CC   for treating a subject with bone loss. The present sequence represents
CC   mouse RAIN, which is used in the exemplification of the present
CC   invention. The mouse RAIN gene is located on chromosome 2.
XX
SQ   Sequence 241 AA;

  Query Match             93.8%;  Score 1239.5;  DB 8;  Length 241;
  Best Local Similarity   93.8%;  Pred. No. 4.1e-128;
  Matches  227;  Conservative    9;  Mismatches    5;  Indels    1;  Gaps    1;

Qy          1 MSGCDAGEGDCCSRRCGAQDKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAP 60
              |||| | :|||||| ||||||||||:||||||||||||||||||||||||:||||||
Db          1 MSGCQA-QGDCCSRPCGAQDKEHPRFLIPELCKQFYHLGWVTGTGGGISLKHGNEIYIAP 59

Qy         61 SGVQKERIQPEDMFVCDINEKDISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 120
              ||||||||||||||||||:|||||  ||||||||||||||||||||||||||||||||||
Db         60 SGVQKERIQPEDMFVCDINEQDISGPPASKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKA 119

Qy        121 AVMATLLFPGREFKITHQEMIKGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHA 180
              ||||||||||:|||||||||||||:||||||||||||||||||||||||||||| ||:|||||
Db        120 AVMATLLFPGQEFKITHQEMIKGIRKCTSGGYYRYDDMLVVPIIENTPEEKDLKERMAHA 179

Qy        181 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENG 240
              ||||||||||||||||||||||||||||||||||||||||||||||:||||:||||||||
Db        180 MNEYPDSCAVLVRRHGVYVWGETWEKAKTMCECYDYLFDIAVSMKKMGLDPTQLPVGENG 239

Qy        241 IV 242
              ||
Db        240 IV 241


RESULT 11
ABB65485
ID   ABB65485 standard; protein; 227 AA.
XX
AC   ABB65485;
XX
DT   26-MAR-2002  (first entry)
XX
DE   Drosophila melanogaster polypeptide SEQ ID NO 23247.
XX
KW   Drosophila; developmental biology; cell signalling; insecticide;
KW   pharmaceutical.
XX
OS   Drosophila melanogaster.
XX
PN   WO200171042-A2.
XX
PD   27-SEP-2001.
XX
PF   23-MAR-2001; 2001WO-US009231.
XX
PR   23-MAR-2000; 2000US-0191637P.
PR   11-JUL-2000; 2000US-00614150.
XX
PA   (PEKE ) PE CORP NY.
XX
PI   Venter JC,  Adams M,  Li PWD,  Myers EW;
XX
DR   WPI; 2001-656860/75.
DR   N-PSDB; ABL09588.
XX
PT   New isolated nucleic acid detection reagent for detecting 1000 or more
PT   genes from Drosophila and for elucidating cell signaling and cell-cell
PT   interactions.
XX
PS   Disclosure; SEQ ID NO 23247; 21pp + Sequence Listing; English.
XX
CC   The invention relates to an isolated nucleic acid detection reagent
CC   capable of detecting 1000 or more genes from Drosophila. The invention is
CC   useful in developmental biology and in elucidating cell signalling and
CC   cell-cell interactions in higher eukaryotes for the development of
CC   insecticides, therapeutics and pharmaceutical drugs. The invention
CC   discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA
CC   sequences (ABL01840-ABL16175) and the encoded proteins (ABB57737-
CC   ABB72072). The sequence data for this patent did not form part of the
CC   printed specification, but was obtained in electronic format directly
CC   from WIPO at ftp.wipo.int/pub/published_pct_sequences
XX
SQ   Sequence 227 AA;

  Query Match             59.8%;  Score 790;  DB 4;  Length 227;
  Best Local Similarity   70.3%;  Pred. No. 2e-78;
  Matches  149;  Conservative   19;  Mismatches   44;  Indels    0;  Gaps    0;

Qy         22 EHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAPSGVQKERIQPEDMFVCDINEK 81
              ||||:||| ||:||||||||||||:|:|: ||||||||||||||:||||:|| ||  |
Db         12 EHPRHLIPSLCRQFYHLGWVTGTGGGMSIKYNDEIYIAPSGVQKERMQPEDLFVQDITGK 71

Qy         82 DISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKAAVMATLLFPGREFKITHQEMI 141
              |:  |   | ||||||||||| ||  | |||||||||: |||||||:||: |: || |||
Db         72 DLQLPPEIKGLKKSQCTPLFMLAYQHRQAGAVIHTHSQHAVMATLLWPGKTFRCTHLEMI 131

Qy        142 KGIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHAMNEYPDSCAVLVRRHGVYVWG 201
              ||:       | |||: |||||||||| |: | | |  || |||   |:||||||||||
Db        132 KGVYDEADKRYLRYDEELVVPIIENTPFERDLADSMYAAMMEYPGCSAILVRRHGVYVWG 191

Qy        202 ETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQ 233
              : ||||||| ||||||| ||| ||| |:|| :
Db        192 QNWEKAKTMSECYDYLFSIAVEMKKAGIDPEK 223


RESULT 12
ABO55349
ID   ABO55349 standard; protein; 64 AA.
XX
AC   ABO55349;
XX
DT   29-JUL-2004  (first entry)
XX
DE   Human genome derived single exon protein #1583.
XX
KW   Human; gene expression; single exon probe; microarray;
KW   alternative splicing event; genomic alteration.
XX
OS   Homo sapiens.
XX
PN   US2003194704-A1.
XX
```

PD 16-OCT-2003.
XX
PF 03-APR-2002; 2002US-00029386.
XX
PR 03-APR-2002; 2002US-00029386.
XX
PA (PENN/) PENN S G.
PA (RANK/) RANK D R.
PA (HANZ/) HANZEL D K.
XX
PI Penn SG, Rank DR, Hanzel DK;
XX
DR WPI; 2004-119264/12.
XX
PT New human genome-derived single exon nucleic acid probes useful for human
PT gene expression analysis, for identifying or characterizing alternative
PT splicing events, for assessing genomic alterations or as tools for
PT surveying tissues.
XX
PS Claim 45; SEQ ID NO 28983; 80pp; English.
XX
CC The invention relates to a nucleic acid probe for measuring human gene
CC expression, comprising any of the 27,400 fully defined nucleotide
CC sequences in the specification, or their complements or fragments, and
CC encoding at least 8 amino acids of any of the 6888 amino acid sequences
CC fully defined in the specification. The probe is a single exon probe that
CC hybridises under high stringency conditions to a nucleic acid molecule
CC expressed in human cells or tissues. Also included are a spatially-
CC addressable set of single exon nucleic acid probes for measuring human
CC gene expression (comprising a plurality of single exon nucleic acid
CC probes cited above, where each of the plurality of probes is separately
CC and addressably isolatable or amplifiable from the plurality), a single
CC exon microarray for measuring human gene expression, a method of
CC measuring human gene expression, a vector comprising the single exon
CC probe cited above, an ORF-encoded peptide comprising at least 8
CC contiguous amino acids of any of the above- mentioned amino acid
CC sequences (optionally with conservative amino acid substitutions), an
CC isolated antibody that binds specifically to a peptide cited above,
CC methods of selling and/or licensing single exon probes or microarrays to
CC a customer desiring to measure gene expression, a method of providing
CC human gene expression data by subscription, and a computer-readable
CC storage medium which contains a database having a plurality of records
CC (each record including data on the expression of a single exon probe
CC cited above. The probe, methods and apparatus are useful in gene
CC expression analysis. The probes may be used as tools for surveying
CC tissues to detect the presence of expressed messages that contain their
CC specific exon, or in constructing genome-derived single exon microarrays.
CC In addition, the probes are used in identifying and characterising
CC alternative splicing events, in detecting and characterising gross
CC alterations in the genomic locus that includes their exon, in assessing
CC smaller genomic alterations, in priming the synthesis of nucleic acids,
CC or in expressing the ORF-encoded peptide. The present sequence is a human
CC single exon probe protein of the invention. Note: The sequence data for
CC this patent did not form part of the printed specification, but was
CC obtained in electronic format directly from USPTO at
CC seqdata.uspto.gov/sequence.html?DocID=20030194704
XX
SQ Sequence 64 AA;

Query Match 23.6%; Score 312; DB 8; Length 64;
Best Local Similarity 98.3%; Pred. No. 2.4e-26;
Matches 57; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy        153 YRYDDMLVVPIIENTPEEKGLKDRMAHAMNEYPDSCAVLVRRHGVYVWGETWEKAKTM 210
              |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db          7 YRYDDMLVVPIIENTPEEKDLKDRMAHAMNEYPDSCAVLVRRHGVYVWGETWEKAKTM 64
```

RESULT 13
AAO10783
ID AAO10783 standard; protein; 129 AA.
XX
AC AAO10783;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human polypeptide SEQ ID NO 24675.
XX
KW Human; cytokine; cell proliferation; cell differentiation; gene therapy;
KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;
KW tissue growth factor; immunomodulatory; cancer; leukaemia;
KW nervous system disorders; arthritis; inflammation.
XX
OS Homo sapiens.
XX
PN WO200164835-A2.
XX
PD 07-SEP-2001.
XX
PF 26-FEB-2001; 2001WO-US004927.
XX
PR 28-FEB-2000; 2000US-00515126.
PR 18-MAY-2000; 2000US-00577409.
XX
PA (HYSE-) HYSEQ INC.
XX
PI Tang YT, Liu C, Drmanac RT;
XX
DR WPI; 2001-514838/56.
DR N-PSDB; AAI90714.
XX
PT Isolated nucleic acids and polypeptides, useful for preventing diagnosing
PT and treating e.g. leukemia, inflammation and immune disorders.
XX
PS Claim 20; SEQ ID NO 24675; 1399pp + Sequence Listing; English.
XX
CC The invention relates to human polynucleotides (AAI79941-AAI93841) and
CC the encoded proteins (AAO00010-AAO13910) that exhibit activity elating to
CC cytokine, cell proliferation or cell differentiation or which may induce
CC production of other cytokines in other cell populations. The
CC polynucleotides and polypeptides are useful in gene therapy, vaccines or
CC peptide therapy. The polypeptides have various cytokine-like activities,
CC e.g. stem cell growth factor activity, haematopoiesis regulating
CC activity, tissue growth factor activity, immunomodulatory activity and
CC activin/inhibin activity and may be useful in the diagnosis and/or
CC treatment of cancer, leukaemia, nervous system disorders, arthritis and
CC inflammation. Note: The sequence data for this patent did not form part
CC of the printed specification, but was obtained in electronic format
CC directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
XX
SQ Sequence 129 AA;

Query Match 20.7%; Score 273.5; DB 4; Length 129;
Best Local Similarity 49.1%; Pred. No. 1.2e-21;
Matches 54; Conservative 3; Mismatches 6; Indels 47; Gaps 1;

```
Qy          1 MSGCDAGEGDCCSRRCGAQ---------------------------------------- 19
              ||||:| :|||||||||:
Db         20 MSGCNARKGDCCSRRCGSHLXNXIPTDWPLNXFFLTSAKVKECFPKKESIYSQTVYXSPG 79

Qy         20 ------DKEHPRYLIPELCKQFYHLGWVTGTGGGISLKHGDEIYIAPSGV 63
                    |||||||||| || ||||| |||||||| ||||||||||||||
Db         80 XKMXTXDKEHPRYLIPXLCIQFYHLCWVTGTGGGIILKHGDEIYIAPSGV 129
```

RESULT 14
AAG74374
ID AAG74374 standard; protein; 59 AA.
XX
AC AAG74374;
XX
DT 03-SEP-2001 (first entry)
XX
DE Human colon cancer antigen protein SEQ ID NO:5138.
XX
KW Human; colon cancer; colon cancer antigen; diagnosis; detection;

KW colorectal carcinoma.
XX
OS Homo sapiens.
XX
PN WO200122920-A2.
XX
PD 05-APR-2001.
XX
PF 28-SEP-2000; 2000WO-US026524.
XX
PR 29-SEP-1999; 99US-0157137P.
PR 03-NOV-1999; 99US-0163280P.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Ruben SM, Barash SC, Birse CE, Rosen CA;
XX
DR WPI; 2001-235357/24.
DR N-PSDB; AAH33805.
XX
PT Nucleic acids encoding 4277 human colon cancer-associated polypeptides,
PT useful for preventing, diagnosing and/or treating colorectal cancers.
XX
PS Claim 11; Page 6841; 9803pp; English.
XX
CC AAH32943 to AAH37195 and AAG73514 to AAG77788 represent human colon
CC cancer-associated nucleic acid molecules (N) and proteins (P), where the
CC proteins are collectively known as colon cancer antigens. The colon
CC cancer antigens have cytostatic activity and can be used in gene therapy
CC and vaccine production. N and P may be used in the prevention, diagnosis
CC and treatment of diseases associated with inappropriate P expression. For
CC example, N and P may be used to treat disorders associated with decreased
CC expression by rectifying mutations or deletions in a patient's genome
CC that affect the activity of P by expressing inactive proteins or to
CC supplement the patients own production of P. Additionally, N may be used
CC to produce the colon cancer-associated Ps, by inserting the nucleic acids
CC into a host cell and culturing the cell to express the proteins. N and P
CC can be used in the prevention, diagnosis and treatment of colorectal
CC carcinomas and cancers. AAH37196 to AAH37204 and AAB77789 represent
CC sequences used in the exemplification of the present invention. N.B.
CC Pages 666 to 682 and page 7053 of the sequence listing were missing at
CC time of publication, meaning no sequences are present for SEQ ID NO:1027
CC to 1052, 7921 and 7922
XX
SQ Sequence 59 AA;

Query Match 17.2%; Score 228; DB 4; Length 59;
Best Local Similarity 100.0%; Pred. No. 4.1e-17;
Matches 42; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy        201 GETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENGIV 242
              |||||||||||||||||||||||||||||||||||||||||||
Db         18 GETWEKAKTMCECYDYLFDIAVSMKKVGLDPSQLPVGENGIV 59
```

RESULT 15
ABU17451
ID ABU17451 standard; protein; 212 AA.
XX
AC ABU17451;
XX
DT 19-JUN-2003 (first entry)
XX
DE Protein encoded by Prokaryotic essential gene #2978.
XX
KW Antisense; prokaryotic essential gene; cell proliferation; drug design.
XX
OS Bacillus anthracis.
XX
PN WO200277183-A2.
XX
PD 03-OCT-2002.
XX
PF 21-MAR-2002; 2002WO-US009107.
XX
PR 21-MAR-2001; 2001US-00815242.
PR 06-SEP-2001; 2001US-00948993.
PR 25-OCT-2001; 2001US-0342923P.
PR 08-FEB-2002; 2002US-00072851.
PR 06-MAR-2002; 2002US-0362699P.
XX
PA (ELIT-) ELITRA PHARM INC.
XX
PI Wang L, Zamudio C, Malone C, Haselbeck R, Ohlsen KL, Zyskind JW;
PI Wall D, Trawick JD, Carr GJ, Yamamoto R, Forsyth RA, Xu HH;
XX
DR WPI; 2003-029926/02.
DR N-PSDB; ACA21321.
XX
PT New antisense nucleic acids, useful for identifying proteins or screening
PT for homologous nucleic acids required for cellular proliferation to
PT isolate candidate molecules for rational drug discovery programs.
XX
PS Claim 25; SEQ ID NO 45375; 1766pp; English.
XX
CC The invention relates to an isolated nucleic acid comprising any one of
CC the 6213 antisense sequences given in the specification where expression
CC of the nucleic acid inhibits proliferation of a cell. Also included are:
CC (1) a vector comprising a promoter operably linked to the nucleic acid
CC encoding a polypeptide whose expression is inhibited by the antisense
CC nucleic acid; (2) a host cell containing the vector; (3) an isolated
CC polypeptide or its fragment whose expression is inhibited by the
CC antisense nucleic acid; (4) an antibody capable of specifically binding
CC the polypeptide;(5) producing the polypeptide; (6) inhibiting cellular
CC proliferation or the activity of a gene in an operon required for
CC proliferation; (7) identifying a compound that influences the activity of
CC the gene product or that has an activity against a biological pathway
CC required for proliferation, or that inhibits cellular proliferation; (8)
CC identifying a gene required for cellular proliferation or the biological
CC pathway in which a proliferation-required gene or its gene product lies
CC or a gene on which the test compound that inhibits proliferation of an
CC organism acts; (9) manufacturing an antibiotic; (10) profiling a
CC compound's activity; (11) a culture comprising strains in which the gene
CC product is overexpressed or underexpressed; (12) determining the extent
CC to which each of the strains is present in a culture or collection of
CC strains; or (13) identifying the target of a compound that inhibits the
CC proliferation of an organism. The antisense nucleic acids are useful for
CC identifying proteins or screening for homologous nucleic acids required
CC for cellular proliferation to isolate candidate molecules for rational
CC drug discovery programs, or for screening homologous nucleic acids
CC required for proliferation in cells other than S. aureus, S. typhimurium,
CC K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of
CC the target prokaryotic essential genes. Note: The sequence data for this
CC patent did not form part of the printed specification, but was obtained
CC in electronic format directly from WIPO at
CC ftp.wipo.int/pub/published_pct_sequences
XX
SQ Sequence 212 AA;

Query Match 14.8%; Score 195; DB 6; Length 212;
Best Local Similarity 28.3%; Pred. No. 1.2e-12;
Matches 58; Conservative 30; Mismatches 101; Indels 16; Gaps 5;

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Qy         26 YLIPELCKQFYHLGWVTGTGGGISLKHGDE---IYIAPSGVQKERIQPEDMFVCDINEKD 82
              | : |: |:     |   | | ||:|   |     |  ||  | :  |:|  : |
Db          9 YDLSEIKKELTTRNWFPATSGNISIKVSHEPLTFLITASGKDKTKTTPDDFLLVD----H 64

Qy         83 ISGPSPSKKLKKSQCTPLFMNAYTMRGAGAVIHTHSKAAVMATLLFPGREFKITHQEMIK 142
              :  |    :|: |  | |  : |    || |:| |:    : | |:      : :||:||
Db         65 LGVPVLETELRPSAETILHTHIYNNTNAGCVLHVHTTDNNVITNLY-SDAVTLQNQEIIK 123

Qy        143 GIKKCTSGGYYRYDDMLVVPIIENTPEEKGLKDRMAHAMNEYPDSCAVLVRRHGVYVWGE 202
               :     |       : :|||||      | :     :    || |||:| ||: |||
Db        124 ALDIWEEGA------TIHIPIIENHAHIPTLGENFRKHIQ--GDSGAVLIRNHGITVWGR 175

Qy        203 TWEKAKTMCECYDYLFDIAVSMKKV 227
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                    ||   | |::||   : :  :
Db        176 DSFDAKKRLEAYEFLFQFHIKLLSI 200
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